Product Change Notification / LIAL-07RPOQ740

Date:

13-Dec-2022

Product Category:

Ethernet PHYs

PCN Type:

Manufacturing Change

Notification Subject:

CCB 5135 Final Notice: Qualification of a new lead frame with more Ag area on DAP surface prep for selected KSZ8081 and KSZ8091 device families available in 32L VQFN (5x5x0.9mm) package assembled at MTAI assembly site.

Affected CPNs:

LIAL-07RPOQ740_Affected_CPN_12132022.pdf
LIAL-07RPOQ740_Affected_CPN_12132022.csv

Notification Text:

PCN Status: Final Notification

PCN Type: Manufacturing Change

Microchip Parts Affected: Please open one of the files found in the Affected CPNs section.
Note: For your convenience Microchip includes identical files in two formats (.pdf and .xls)

Description of Change: Qualification of a new lead frame with more Ag area on DAP surface prep for selected KSZ8081 and KSZ8091 device families available in 32L VQFN (5x5x0.9mm) package assembled at MTAI assembly site.

Pre and Post Change Summary:

	Pre Change	Post Change

Assembly Site	Microchip Technology Thailand (HQ)/ (MTAI)	Microchip Technology Thailand (HQ)/ MTAI
Wire material	Au/2N	Au/2N
Die attach material	3280	3280
Molding compound material	G700LTD	G700LTD
Lead frame material	A194	A194
Lead frame DAP surface prep	Ag selective plating	Ag selective plating (Add more Ag area)
	See Pre and Post Change Summary for comparison.	

Impacts to Data Sheet: None

Change Impact None

Reason for Change: To improve productivity by qualifying new lead frame with more Ag area on DAP surface prep.

Change Implementation Status: In Progress

Estimated First Ship Date: December 30, 2022 (date code: 2253)

Note: Please be advised that after the estimated first ship date customers may receive pre and post change parts.

Time Table Summary:

	August 2022					**>**	**December 2022**				
Workweek	32	33	34	35	36		49	50	51	52	53
Initial PCN Issue Date		x									
Qual Report Availability									x		
Final PCN Issue Date									x		
Estimated Implementation											x

Date											

Method to Identify Change: Traceability code

Qualification Report: Please open the attachments included with this PCN labeled as PCN_#_Qual_Report.

Revision History: August 11, 2022: Issued initial notification.
December 13, 2022: Issued final notification. Attached the Qualification Report. Updated affected parts list. Provided estimated first ship date to be on December 30, 2022.

The change described in this PCN does not alter Microchip's current regulatory compliance regarding the material content of the applicable products.

Attachments:

PCN_LIAL-07RPOQ740_Qual Report.pdf
PCN_LIAL-07RPOQ740_Pre and Post Change Summary.pdf

Please contact your local Microchip sales office with questions or concerns regarding this notification.

Terms and Conditions:

If you wish to receive Microchip PCNs via email please register for our PCN email service at our PCN home page select register then fill in the required fields. You will find instructions about registering for Microchips PCN email service in the PCN FAQ section.

If you wish to change your PCN profile, including opt out, please go to the PCN home page select login and sign into your myMicrochip account. Select a profile option from the left navigation bar and make the applicable selections.

Affected Catalog Part Numbers (CPN)

KSZ8091RNBCA
KSZ8081MNXCA
KSZ8091MNXCA
KSZ8081MNXIA
KSZ8081RNBCA-TR
KSZ8091RNBCA-TR
KSZ8081MNXCA-TR
KSZ8091MNXCA-TR
KSZ8081RNBIA-TR
KSZ8091RNBIA-TR
KSZ8081MNXIA-TR
KSZ8091MNXIA-TR
SPNZ801174

QUALIFICATION REPORT SUMMARY
RELIABILITY LABORATORY

PCN# LIAL-07RPOQ740

Date
November 25, 2022

Qualification of a new lead frame with more Ag area on DAP surface prep for selected KSZ8081 and KSZ8091 device families available in 32L VQFN (5x5x0.9mm) package assembled at MTAI assembly site.

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PACKAGE QUALIFICATION REPORT

Purpose	Qualification of a new lead frame with more Ag area on DAP surface prep for selected KSZ8081 and KSZ8091 device families available in 32L VQFN (5x5x0.9mm) package assembled at MTAI assembly site.
CN	E000107074
QUAL ID	R2200733 Rev A
MP CODE	XKAA19PFAVA2
Part No.	KSZ8051MNLV-VAO
Bonding No.	BD-000677 Rev.02
CCB	5135
<u>Package</u>	
Type	32L VQFN
Package size	5 x 5 x 0.9 mm
<u>Lead Frame</u>	
Paddle size	150 x 150 mils
Material	A194
Surface	Ag selective plating (Add more Ag area)
Process	Etched
Lead Lock	Yes
Part Number	10103214
<u>Material</u>	
Epoxy	3280
Wire	Au/2N
Mold Compound	G700LTD
Plating Composition	Matte Sn

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PACKAGE QUALIFICATION REPORT

Manufacturing Information:

Assembly Lot No.	Wafer Lot No.	Date Code
MTAI230601567.000	DU02922523132.430	2219PAK
MTAI230601935.000	DU02922523132.430	2219Q83
MTAI230601936.000	DU02922523132.430	2219Q8D

Result ☒ Pass ☐ Fail ☐ ____________________

32L VQFN (5x5x0.9 mm) assembled by MTAI pass reliability test per QCI-39000. This package was qualified the Moisture/Reflow Sensitivity Classification Level 2 at 260°C reflow temperature per IPC/JEDEC J-STD-020E standard.

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS	Result	Remarks
Precondition Prior Perform Reliability Tests (At MSL Level 2)	**Electrical Test:** +25°C, 105°C and -43°C System: Chroma / SMB600	JESD22-A113	693(0)	0/693		Good Devices
	Bake 150°C, 24 hrs System: CHINEE	JIP/ IPC/JEDEC J-STD-020E		0/693		
	85°C/60%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH			0/693		
	3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243			0/693		
	Electrical Test: +25°C and 105°C System: Chroma / SMB600		693(0)	0/693	Pass	
Temp Cycle	**Stress Condition:** -55°C to +125°C, 1000 Cycles System: TABAI ESPEC TSA-70H	JESD22-A104		0/231		Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C and 105°C System: Chroma		231(0)	0/231	Pass	77 units / lot
	Bond Strength: Wire Pull (>2.50 grams)		15(0)	0/15	Pass	
	Bond Shear (>15.00 grams)		15(0)	0/15	Pass	
UNBIASED-HAST	**Stress Condition:** +130°C/85%RH, 96 hrs. System: HAST 6000X	JESD22-A118		0/231		Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C System: SMB600		231(0)	0/231	Pass	77 units / lot
HAST	**Stress Condition:** +130°C/85%RH, 96 hrs. **Bias Volt:** 3.3 Volts System: HAST 6000X	JESD22-A110		0/231		Parts had been pre-conditioned at 260°C
	Electrical Test: +25°C and 105°C System: Chroma / SMB600		231(0)	0/231	Pass	77 units / lot

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
High Temperature Storage Life	**Stress Condition:** Bake 150°C, 500 hrs. System: SHEL LAB	JESD22-A103		0/45		
	Electrical Test: +25°C and 105°C System: Chroma / SMB600		45(0)	0/45	Pass	
Bond Strength Data Assembly	Wire Pull (>2.50 grams)	Mil. Std. 883-2011	30(0) Wires	0/30	Pass	
	Bond Shear (>15.00 grams)	CDF-AEC-Q100-001	30(0) bonds	0/30	Pass	